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ABSTRACT:

PROBLEM TO BE SOLVED: To perform digital communication by changing the optical path length of a light beam amplitude-modulated at a fixed frequency by mechanically vibrating a corner cube along with a reflection axis corresponding to a digital signal so as not to impair retroreflection property.

SOLUTION: A laser transmitter 42 projects a light beam 58 having a waveform 50 amplitude-modulated at the fixed frequency. Transmission equipment 32 is provided with a corner cube 48 and a device for vibrating this corner cube 48 back and forth in the direction of reflection axis as shown by an arrow 49 corresponding to a digital signal 56. The light beam 58 is reflected in the direction of incoming by the corner cube 48 and made incident on a photoelectric transducer circuit 44 as a light beam. The optical path length during this operation is changed corresponding to the vibration of the corner cube 48. Therefore, the phase of amplitude modulation of light beam 60 has a waveform 52 changed corresponding to this optical path length. A demodulation circuit 46 compares the phase of the modulated waveform from the laser transmitter 42 with that of the received waveform 52 to obtain a signal 54 corresponding to the digital signal 56.